

The Weather Enterprise: Conflict or Cooperation?

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Weather and Climate is Big Business



99%
of executives surveyed say
improved weather insights can
reduce annual operating costs



93%
of executives surveyed report
that improved weather insights
can positively impact annual
revenue growth



68%
of executives surveyed expect
that weather insights as a service
would be more valuable than
raw data



THE GLOBAL GOALS
For Sustainable Development



Disruption Across the Value Chain



Observations



Forecasting
Technology



Weather
Forecasts



Post
Processing
Analytics



Impacts

But much room for improvement across this chain!

Business

The weather is big business, and it's veering toward a collision with the federal government

Now for your local weather forecast: That'll be \$10, please

The Washington Post, Nov 25, 2019

What's Worked to Date?



US Warning System

- NWS is sole authority
- Broadcasters/digital providers deliver in a timely manner, unaltered with attribution
- Why: Public safety, liability concerns
- Challenges:
 - Warning formats lag industry trends
 - Business interests/needs surpass government services

Flash Flood Warnings

BULLETIN - EAS ACTIVATION REQUESTED
Flash Flood Warning
National Weather Service Duluth MN
629 PM CDT MON JUN 18 2018

The National Weather Service in Duluth MN has issued a

* Flash Flood Warning for...

A Dam Failure in...

East central Pine County in east central Minnesota...

Southwestern Douglas County in northwestern Wisconsin...

North central Burnett County in northwestern Wisconsin...

* Until 630 PM CDT Tuesday

* At 629 PM CDT, local law enforcement reported the Radigan Flowage Dam west of Dairyland has failed, causing flash flooding downstream on the Tamarack River south of the Dam as it flows towards the Saint Croix River.

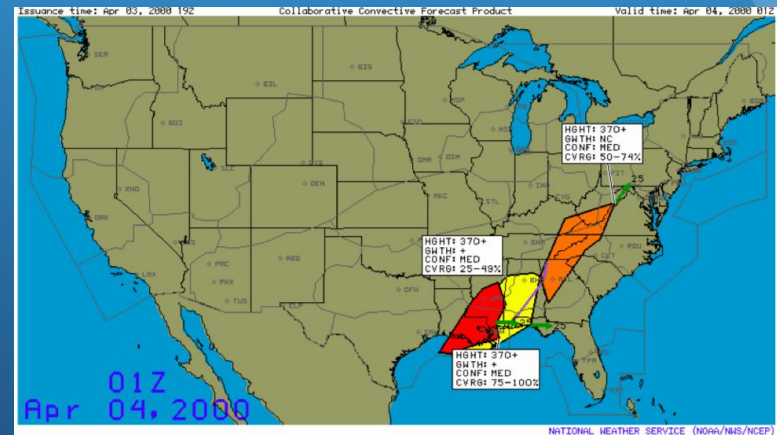
Collaborative Forecasting

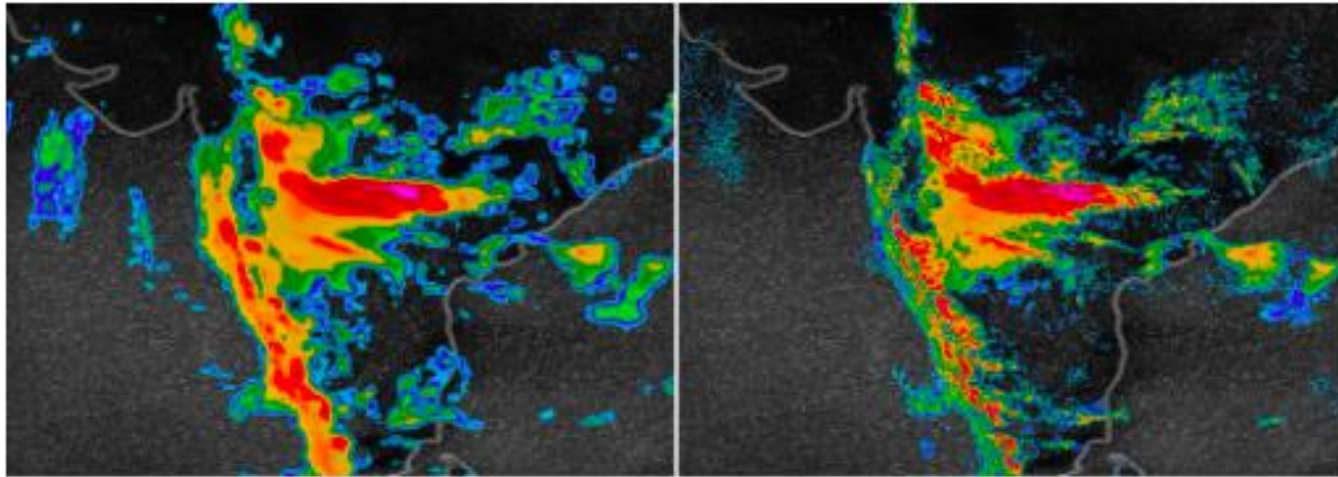
Collaborative Convective Forecast Product

Why: Driven by user
(airline) needs

How: 30 minute chat
room for collaboration;
NWS makes final
decision

Limited in scope but
successful





A side-by-side comparison of monsoon rains over India as seen by an existing global weather model ... [+] IBM/THE WEATHER COMPANY

NCAR Community Modeling

Federal funding provides infrastructure

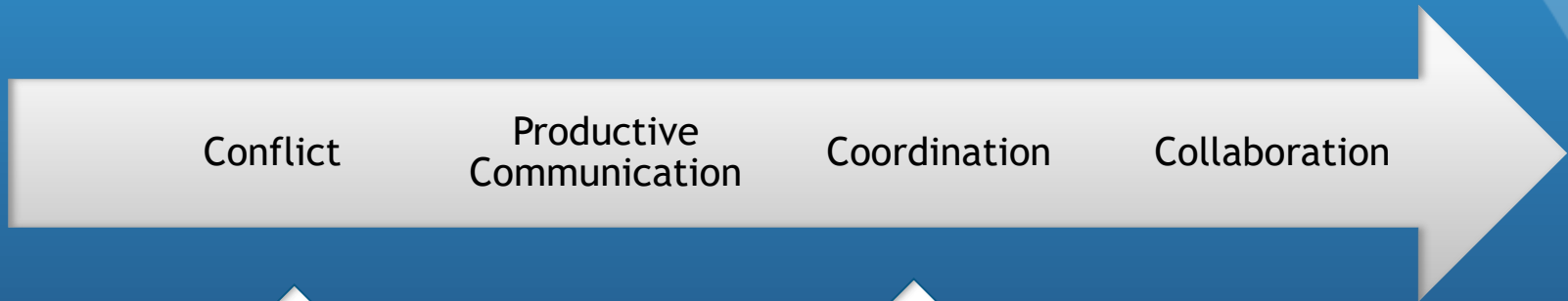
Sharing is encouraged but not required

Incentives for sharing include professional development for staff

US Federal Appropriations and Legislation Process

- Successes:
 - Private Sector support for NOAA satellites and Federal research funding
- US Weather Forecast Improvement Act
- New modeling approach: EPIC ??

US Weather Enterprise



1990's



2019

On-going engagement/ few NOAA policies and structures

Issues and Considerations

- Public Good
- Economics
- National interests
- Evolving business trends
(e.g., Systems as a Service)



Next Steps?

What's in our tool box?

- Community forums for discussion
- Tailored collaborative experiments



NOAA's Big Data Project

- Innovative
- Expanded private sector players
- Broad umbrella for efforts



Google Cloud Platform



Data Policy

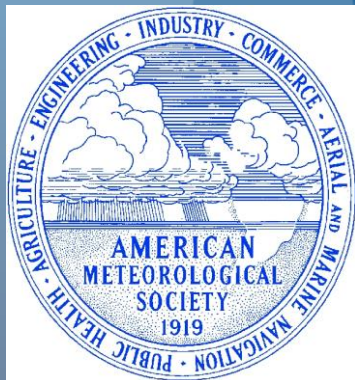
- Commercial data is here and now
- Open access to some data is established practice
- National policies must be adaptable to what will be evolving amounts of commercial data

Do we need to set a 'floor' for what is open and sharable and adjust the 'floor' as science and technology evolves?

AMS100

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January 11-16, 2020

Boston, MA